

TC-818

SERVICE MANUAL

E Model

TC-818 is the cassette deck section in FH-818R.



Model Name Using Similar Mechanism	TC-WR808M
Tape Transport Mechanism Type	Deck A TCM-170RA1 Deck B TCM-170RB7

SPECIFICATIONS

Recording system 4-track 2-channel stereo

Frequency response

Used cassette	
TYPE I (Sony HF-S)	40-13,000 Hz (± 3 dB)
TYPE II (Sony UCX)	40-14,000 Hz (± 3 dB)


Wow and flutter 0.1% WRMS
 $\pm 0.2\%$ (DIN)

Dimensions/Weight

Approx. 225 x 120 x 230 mm (8 ⁷ / ₈ x 4 ³ / ₄ x 9 ¹ / ₈ inches)	Approx. 2.6kg (5 lb 12 oz) net
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* incl. projecting parts and controls

Dolby noise reduction manufactured under license from
Dolby Laboratories Licensing Corporation.

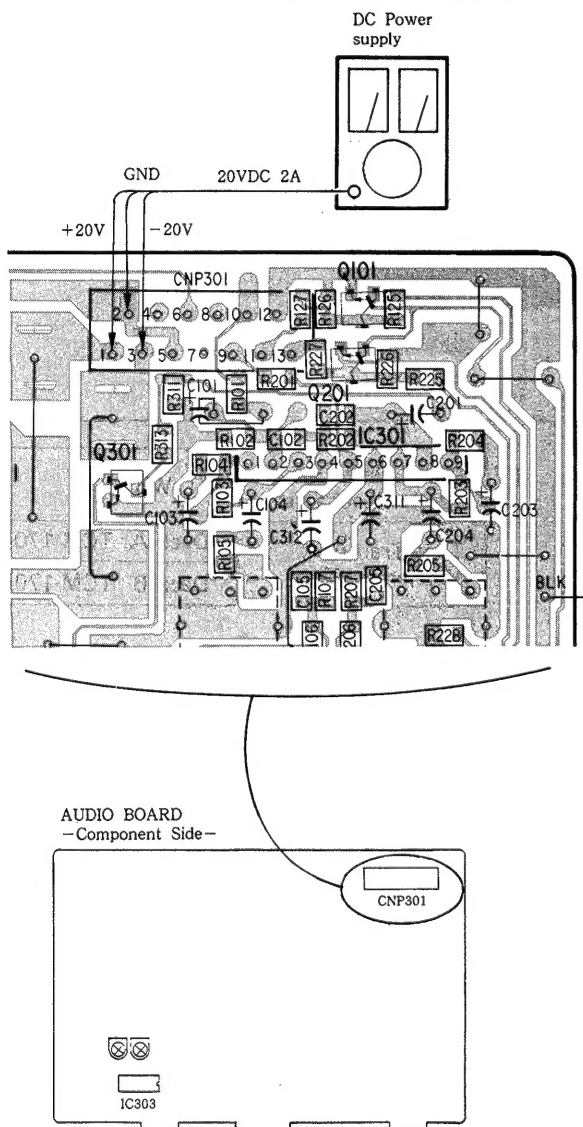
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Dolby Laboratories Licensing Corporation.

STEREO CASSETTE DECK
SONY[®]

REPAIRING PRECAUTION

[To apply B+ voltage]

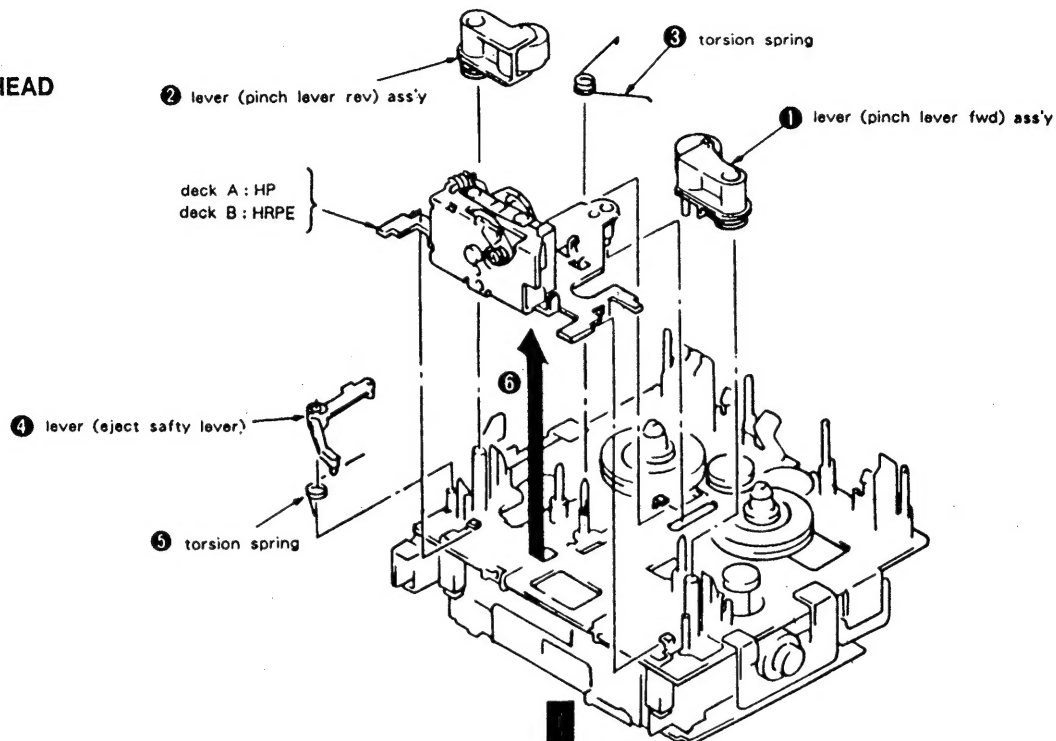
The power of this unit is fed from amplifier.
Because of this, connect the DC Power supply as illustrated below when this unit alone operates.



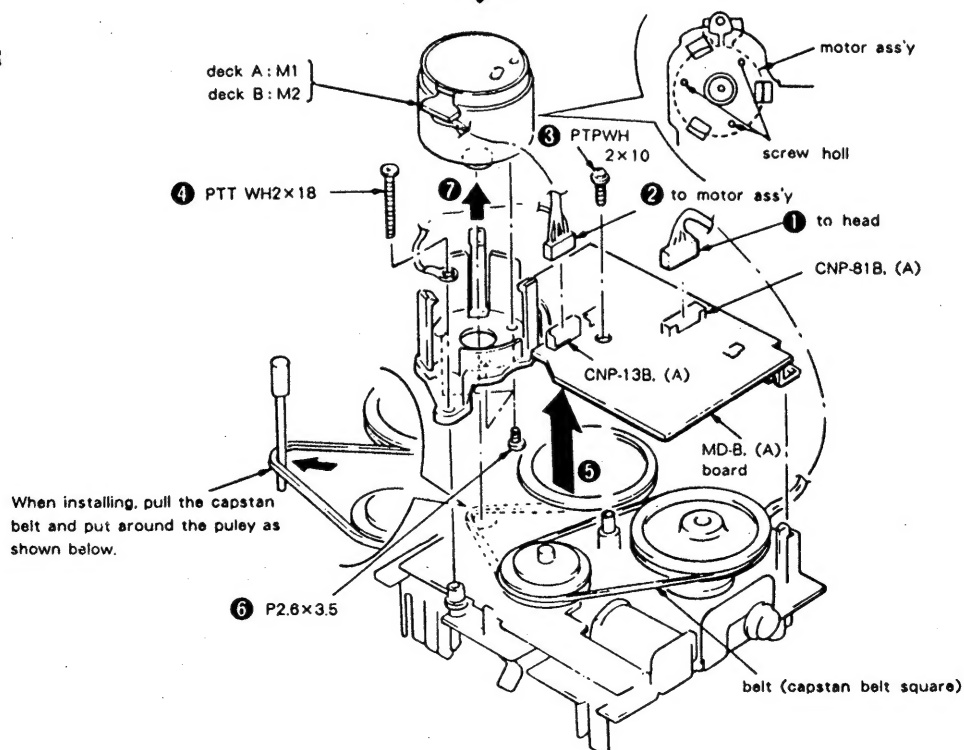
SECTION 1 DISASSEMBLY

Note : Follow the disassembly procedure in the numerical order given.

HEAD



MOTOR



SECTION 2 ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :

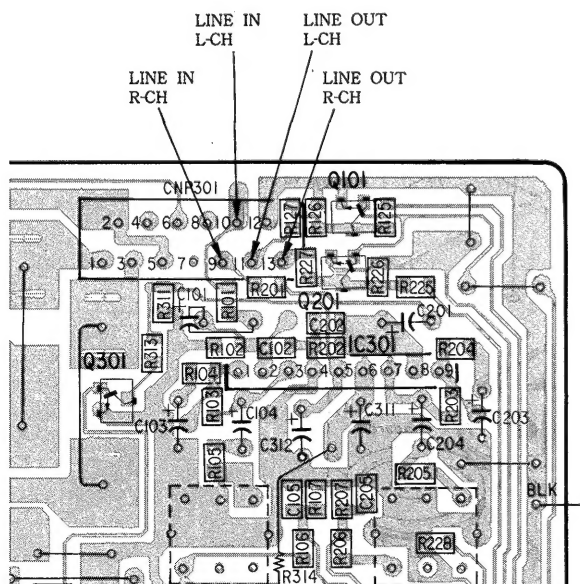
record/playback head	pinch roller
erase head	rubber belts
capstan	idler
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.

Torque Measurement

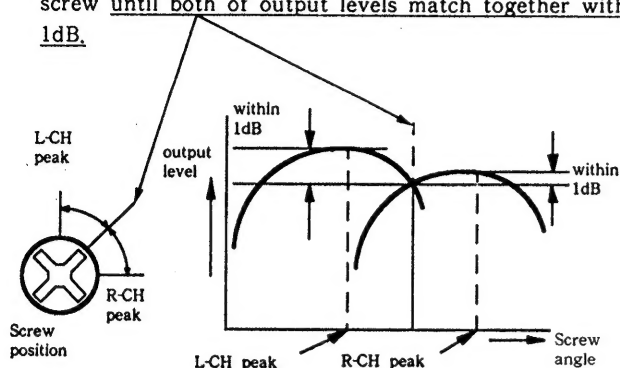
Torque	Torque Meter	Meter Reading
FWD	CQ-102C	27 to 75g · cm (0.378 to 1.05 oz · inch)
FWD Back tension	CQ-102C	1 to 10g · cm (0.014 to 0.14 oz · inch)
REV	CQ-102RC	27 to 75g · cm (0.378 to 1.05 oz · inch)
REV Back Tension	CQ-102RC	1 to 10g · cm (0.014 to 0.14 oz · inch)
FF, REW	CQ-201B	95 to 165g · cm (1.33 to 2.31 oz · inch)

• Location of LINE IN/OUT

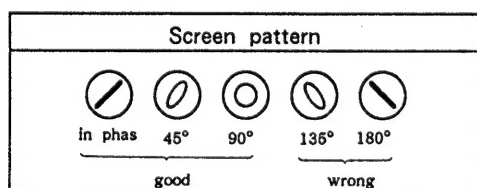
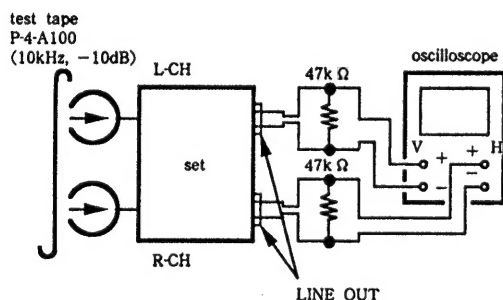
AUDIO Board CNP301



2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.

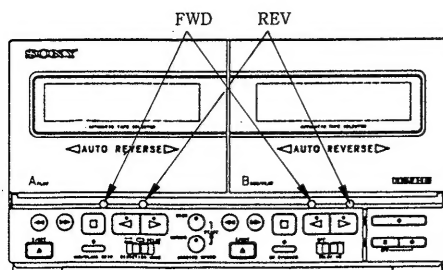
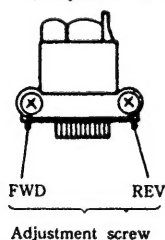


3. Phase Check
Mode : playback



4. Set in the REV mode and repeat the step 1-3.
5. After the adjustment, lock the screws with locking compound.

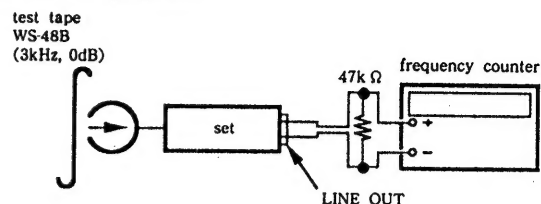
Adjustment Location : Record/Playback head
(Adjustable without disassembly.)



Tape Speed Adjustment **DECK A** **DECK B**

Procedure :

Mode : FWD playback



Perform high speed adjustment before normal speed adjustment.

Connect TP1 to ground with jumper wire and continue to press HIGH SPEED DUBING switch : High speed playback. After the high speed adjustment, remove jumper wire of TP1.

Play back the test tape WS-48B and adjust to meet the specifications below.

speed	deck	Adjustment part	variable resistor of motor	test pin CN811	frequency counter reading
high	A	M11A	(H)	short	5,960±30
	B	M11B	(H)		
normal	A	M11A	(L)	open	2,980±15
	B	M11B	(L)		

Frequency difference between the beginning and the end of the tape should be within 3%.

Frequency difference between deck A and deck B the beginning of the tape should be within 1.5%.

Adjustment Location :

deck A : motor (M11A) rear side

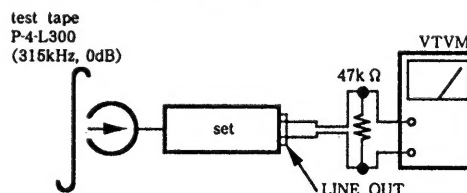
deck B : motor (M11B) rear side

Playback Level Adjustment **DECK A** **DECK B**

Procedure :

Mode : playback

Connect TP1 to ground.



Adjust deck A : RV41A(L-CH), RV61A(R-CH) and deck B : RV41B(L-CH), RV61B(R-CH) so that the reading on VTVM meets the specification below.

LINE OUT LEVEL : $-10 \pm 0.8\text{dB}$

Level difference between channels : less than 0.5dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

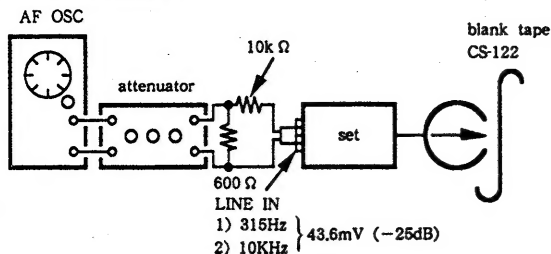
Adjustment Location : MD board

Record Bias Adjustment **DECK B****Setting :**

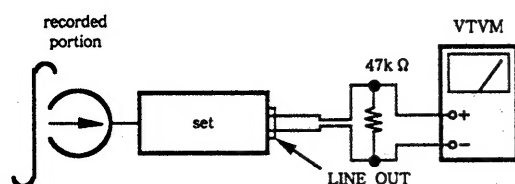
REC LEVEL control : standard record (See page 4.)
Connect TP1 to ground.

Procedure :

1. Mode : record



2. Mode : playback



Confirm that the 10kHz playback output is $0 \pm 0.5\text{dB}$ relative to the 315Hz output. If necessary, adjust RV42 (L-CH), RV62 (R-CH) and repeat the steps given above.
After the adjustment remove jumper wire of TP1.

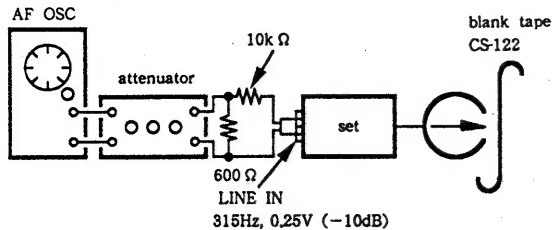
Adjustment Location : MD B board (US, Canadian model)
HX PRO board (AEP, UK model)

Record Level Adjustment **DECK B****Setting :**

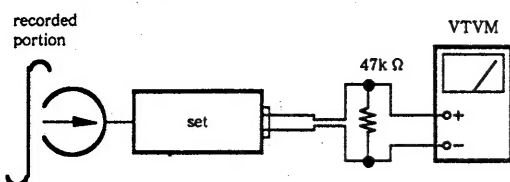
REC LEVEL control : standard record (See page 4.)
Connect TP1 to ground.

Procedure :

1. Mode : record



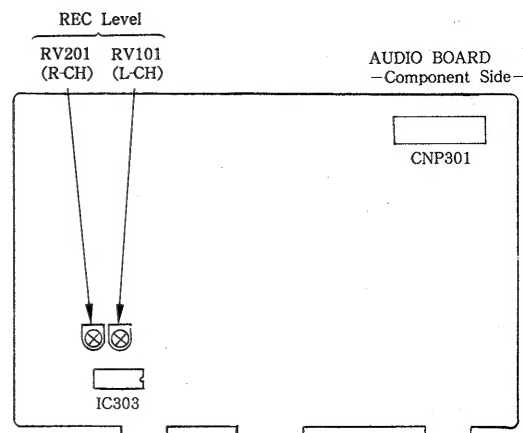
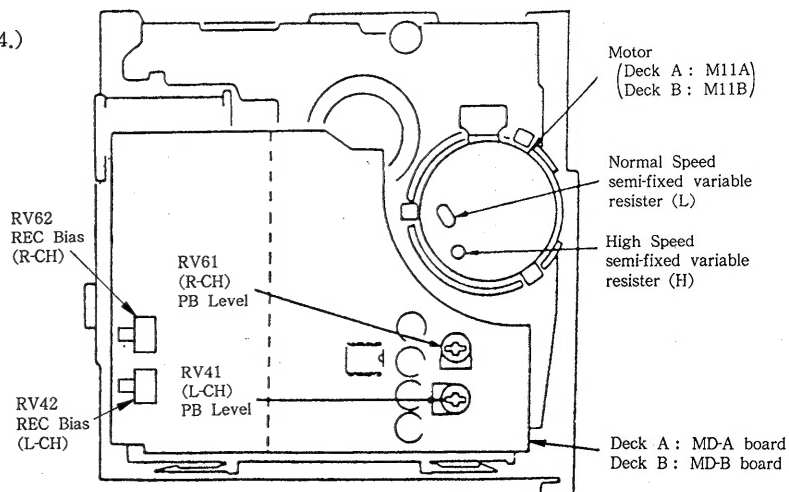
2. Mode : playback



3. Play back the signal recorded in step 1.
Confirm that the signal level is within the specification below. If necessary, adjust RV101 (L-CH), RV201 (R-CH) and repeat the step1-3.
4. After the adjustment, remove jumper wire of TP1.

LINE OUT level : $-8\text{dB} \pm 0.5\text{dB}$

Adjustment Location : audio board

-Adjusting Parts Location Diagram-

SECTION 3 DIAGRAMS

3-1. IC801 M50964-212FP PIN FUNCTIONS

PIN No.	PIN NAME	I/O	SIGNAL NAME	FUNCTION																																																
1	P62	O	A FWD	Deck A FWD LED output																																																
2	P61	O	BIAS IV	TYPE IV bias oscillation output																																																
3	P60	O	BIAS II	TYPE II bias oscillation output																																																
4	P47	O	A REV	Deck A RVS LED output																																																
5	P46	O	A REV	Deck A RVS LED output																																																
6	AN5	I	B HALF	Deck B Record prevention claw A, B detection input (Analogue) <table><tr><td>Voltage (V)</td><td>1 V</td><td>1.9 V</td><td>2.8 V</td><td>3.9 V</td><td>5 V</td></tr><tr><td>Half</td><td>ON</td><td>ON</td><td>ON</td><td>ON</td><td>OFF</td></tr><tr><td>Claw A</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr><tr><td>Claw B</td><td>ON</td><td>ON</td><td>OFF</td><td>OFF</td><td>OFF</td></tr></table>	Voltage (V)	1 V	1.9 V	2.8 V	3.9 V	5 V	Half	ON	ON	ON	ON	OFF	Claw A	OFF	ON	OFF	ON	OFF	Claw B	ON	ON	OFF	OFF	OFF																								
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Half	ON	ON	ON	ON	OFF																																															
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Claw B	ON	ON	OFF	OFF	OFF																																															
7	AN4	I	KEY3	KEY input																																																
8	AN3	I	KEY2	<table><tr><td>Voltage (V)</td><td>0</td><td>0.3</td><td>0.7</td><td>1.2</td><td>1.7</td><td>2.3</td><td>2.8</td><td>3.4</td><td>4.0</td><td>4.5</td><td>5.0</td></tr><tr><td>KEY1</td><td>B■</td><td>B■</td><td>B▶</td><td>B◀</td><td>B○</td><td>A◀◀</td><td>A▶▶</td><td></td><td>□□ B</td><td>□□ C</td><td>OFF</td></tr><tr><td>KEY2</td><td>A■</td><td>A■</td><td>A▶</td><td>A◀</td><td></td><td>B◀◀</td><td>B▶▶</td><td>B●</td><td>↻</td><td>RELAY</td><td>OFF</td></tr><tr><td>KEY3</td><td>AMS</td><td></td><td>HDUB</td><td>NDUB</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	Voltage (V)	0	0.3	0.7	1.2	1.7	2.3	2.8	3.4	4.0	4.5	5.0	KEY1	B■	B■	B▶	B◀	B○	A◀◀	A▶▶		□□ B	□□ C	OFF	KEY2	A■	A■	A▶	A◀		B◀◀	B▶▶	B●	↻	RELAY	OFF	KEY3	AMS		HDUB	NDUB							
Voltage (V)	0	0.3	0.7	1.2	1.7	2.3	2.8	3.4	4.0	4.5	5.0																																									
KEY1	B■	B■	B▶	B◀	B○	A◀◀	A▶▶		□□ B	□□ C	OFF																																									
KEY2	A■	A■	A▶	A◀		B◀◀	B▶▶	B●	↻	RELAY	OFF																																									
KEY3	AMS		HDUB	NDUB																																																
9	AN2	I	KEY1																																																	
10	P41	O	B FWD	Deck B FWD LED output																																																
11	P40	O	B REV	Deck B RVS LED output																																																
12	P37	O	A FWD	Deck A FWD LED output																																																
13	P36	O	B PAUSE	Deck B PAUSE LED output																																																
14	P35	O	B REC	Deck B REC LED output																																																
15	P34	O	DOLBY B/C	Dolby B/C output																																																
16	P33	O	DOLBY ON/OFF	Dolby ON/OFF output																																																
17	P32	I	SIRCS	SIRCS input or AUDIO BUS reverse input																																																
18	P31	O	70/120	Playback EQ output for playing deck																																																
19	P30	O	AUB OUT	AUDIO BUS output																																																
20	INTI	I	AUB IN	AUDIO BUS normal input																																																
24	CNVSS		CNVSS	GND																																																
25	RESET	I	RESET	Microcomputer reset input																																																
26	XIN	I	XIN	Clock input (4 MHz)																																																
27	XO	O	XO	Clock output (4 MHz)																																																
28	Φ	O	Φ	(Not used : OPEN)																																																
29	Vss		Vss	GND																																																
30	P57	I	TEST	Electrical adjusting test mode setting																																																
31	P56	I	TYPE IV	TYPE IV switch input																																																
32	P55	I	B70/I20	Deck B TYPE II switch input																																																
33	P54	I	B SHUT	Deck B Reel table signal input																																																
34	P53	I	A70/I20	Deck A TYPE II switch input																																																
35	P52	I	A SHUT	Deck B Reel table signal input																																																
36	P51	I	A HALF	Deck A Half switch input																																																
37	P50	I	AMSIN	AMS signal input																																																
39	P17	O	MMUTE	Meter mute output																																																
40	P16	O	LMUTE	Line mute output																																																
41	P15	O	PASS	PASS AMP change output																																																
42	P14	O	REC/PB	Dolby IC REC/PB select output																																																
43	P13	O	AMS/BS	AMS AMP characteristics change output																																																

PIN No.	PIN NAME	I/O	SIGNAL NAME	FUNCTION
44	P12	O	AMS A/B	AMS AMP input Deck A/B select output
45	P11	O	SEL A/B	Dolby IC PB input Deck A/B select output
46	P10	O	BIAS I	TYPE I bias oscillation output
47	P07	O	RELAY	REC/PB change relay output
48	P06	O	PM B	Deck B plunger hold output
49	P05	O	KICK B	Deck B plunger kick output
50	P04	O	PM A	Deck A plunger hold output
51	P03	O	KICK A	Deck A plunger kick output
52	P02	O	B H/L	Deck B capstan motor speed select
53	P01	O	A H/L	Deck A capstan motor speed select
54	P00	O	M ON/OFF	Capstan motor ON/OFF
56	P27	O	REC MUTE	REC MUTE output
57	P26	O	B SCHMITT	Deck B reel table schmitt output
58	P25	O	A SCHMITT	Deck A reel table schmitt output
59	P24	O	HDUB	High Speed Dubbing LED output
60	P23	O	NDUB	Normal Speed Dubbing LED output
61	P22	O	CD DUB	Auto CD Synchro LED output
62	P21	O	A PAUSE	Deck A PAUSE LED output
63	P20	O	SIRCS/AUB	SIRCS/AUDIO BUS mode select
64	Vss		Vss	GND
67	Vcc		Vcc	POWER 5 ±0.5 V
68	AVSS		AVSS	Analogue system GND
69	VREF	I	VREF	Analogue system reference voltage input
70	D-A	O	D-A	D/A conversion output (Not used : OPEN)
71	PWM	O	PWM	PWM output (Not used : GND)
72	P63	O	AMS	AMS LED indication output

[TEST MODE]

When making pin ③ low (connect TP1 to ground with jumper wire), following function operates.

1. Source monitor

Release the line mute while recording.

2. High speed playback

On recording, while pressing HIGH SPEED (DUBBING) button, high speed playback operates.

3. Record memory stop

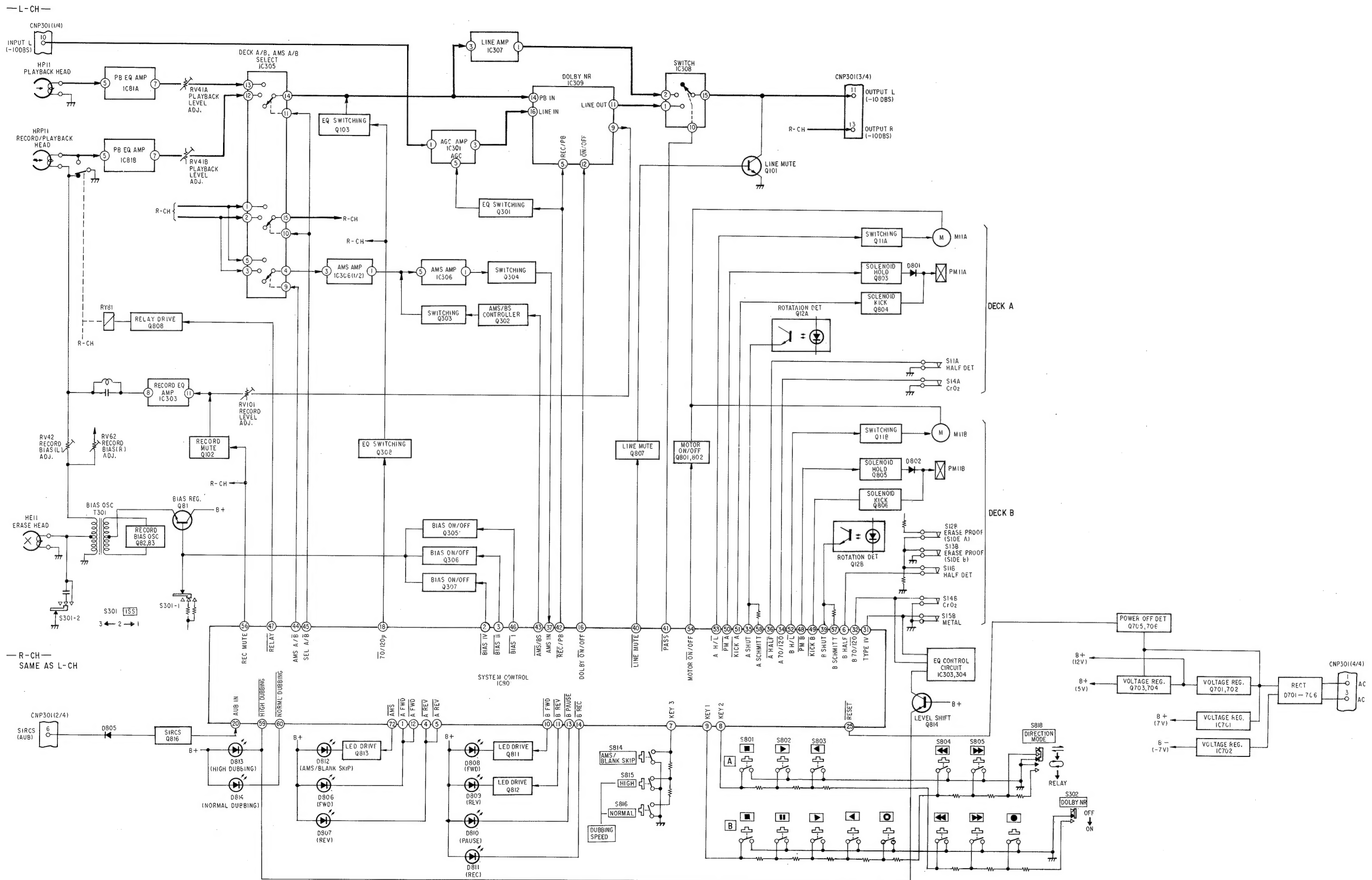
Using DIRECTION MODE switch ⇄, returns to the recording start point and stops or plays.

4. LED indication of slide switch

When making Deck B pause, LED indicates the positions of DIRECTION MODE switch.

Switch	Position	LED
DIRECTION MODE	⇄	Deck A ◀
	↺	Deck A PLAY
	RELAY	Deck A ▶
MODE	NORM	Deck B ◀
	FADE	Deck B PLAY
	ERASE	Deck B ▶

3-2. BLOCK DIAGRAM



3-3. PRINTED WIRING BOARDS

- See page 20 for Semiconductor Lead Layouts.

Note on Printed Wiring Boards:

- : parts extracted from the component side.
- : parts mounted on the conductor side.

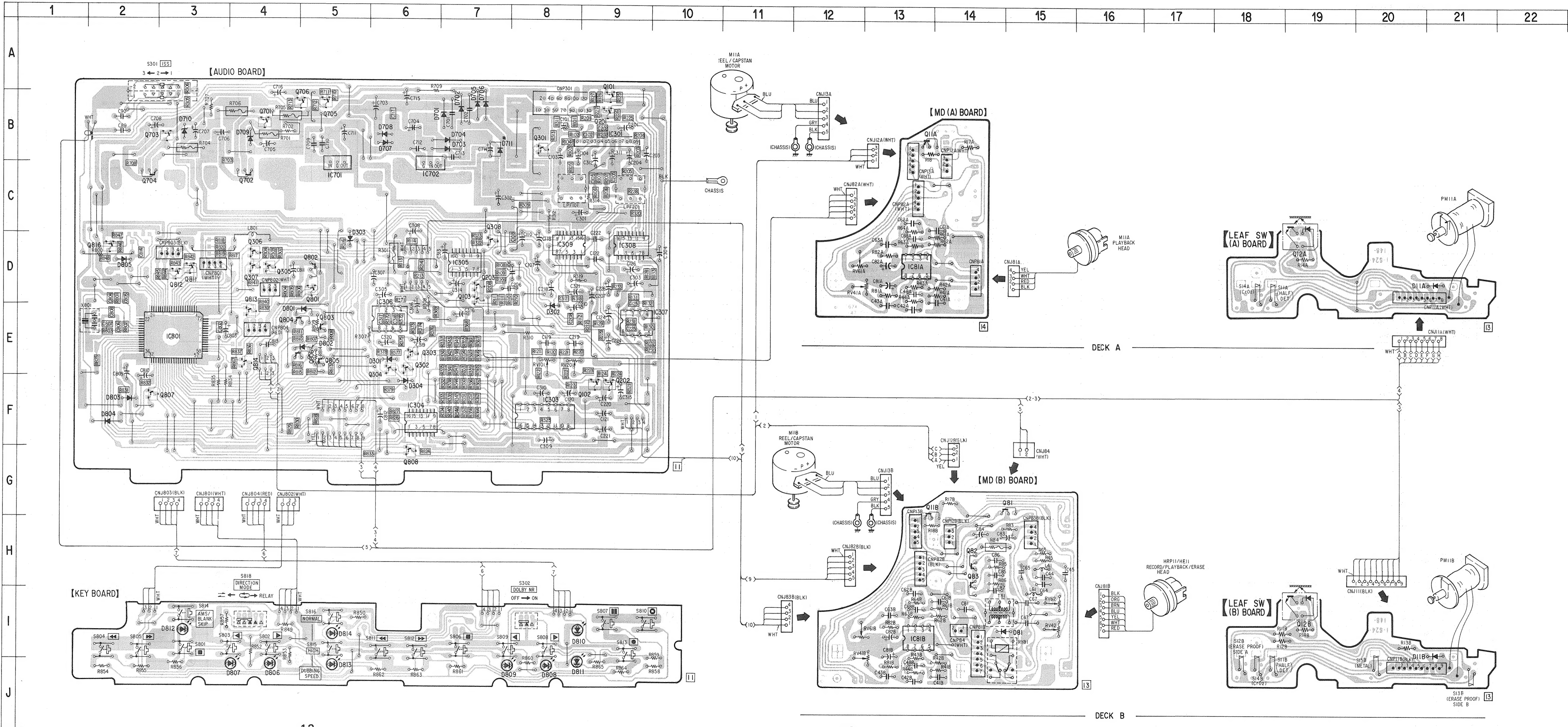
Semiconductor Location

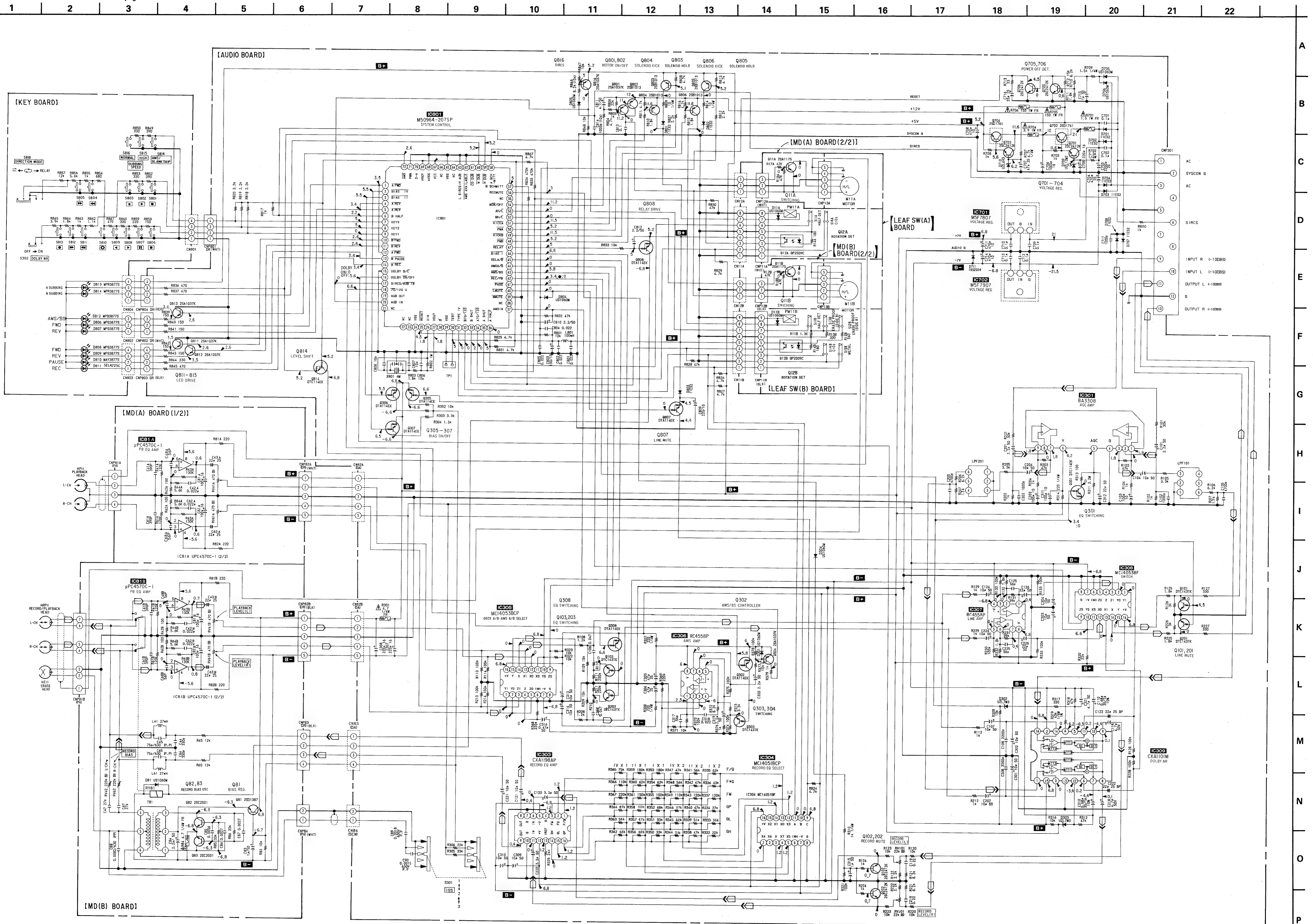
Ref. No.	Location	Ref. No.	Location
D11A	D-21	Q11A	B-13
D11B	I-21	Q11B	G-13
D81	I-15	Q12A	D-19
D301	E-6	Q12B	I-18
D302	E-8	Q81	G-15
D303	D-5	Q82	H-14
D304	F-6	Q83	H-14
D701	B-7	Q101	B-9
D702	B-7	Q102	F-9
D703	B-7	Q103	D-7
D704	B-7	Q201	B-9
D705	B-7	Q202	F-9
D706	B-7	Q203	D-7
D707	B-6	Q301	B-8
D708	B-6	Q302	E-6
D709	B-4	Q303	E-6
D710	B-3	Q304	E-6
D711	B-7	Q305	D-4
D801	E-5	Q306	D-4
D802	E-5	Q307	D-4
D803	F-2	Q308	D-7
D804	F-2	Q701	B-4
D805	D-2	Q702	C-4
D806	J-4	Q703	B-3
D807	J-4	Q704	C-2
D808	J-8	Q705	B-5
D809	J-7	Q706	B-5
D810	I-8	Q801	D-5
D811	J-8	Q802	D-5
D812	I-3	Q803	E-5
D813	J-5	Q804	E-5
D814	I-5	Q805	E-5
		Q806	F-2
IC81A	D-13	Q807	G-6
IC81B	I-13	Q808	D-3
IC301	B-9	Q811	D-3
IC303	F-8	Q812	D-3
IC304	F-6	Q813	E-4
IC305	D-7	Q814	E-4
IC306	E-6	Q816	D-2
IC307	E-9		
IC308	D-9		
IC309	D-8		
IC701	C-5		
IC702	C-6		
IC801	E-3		

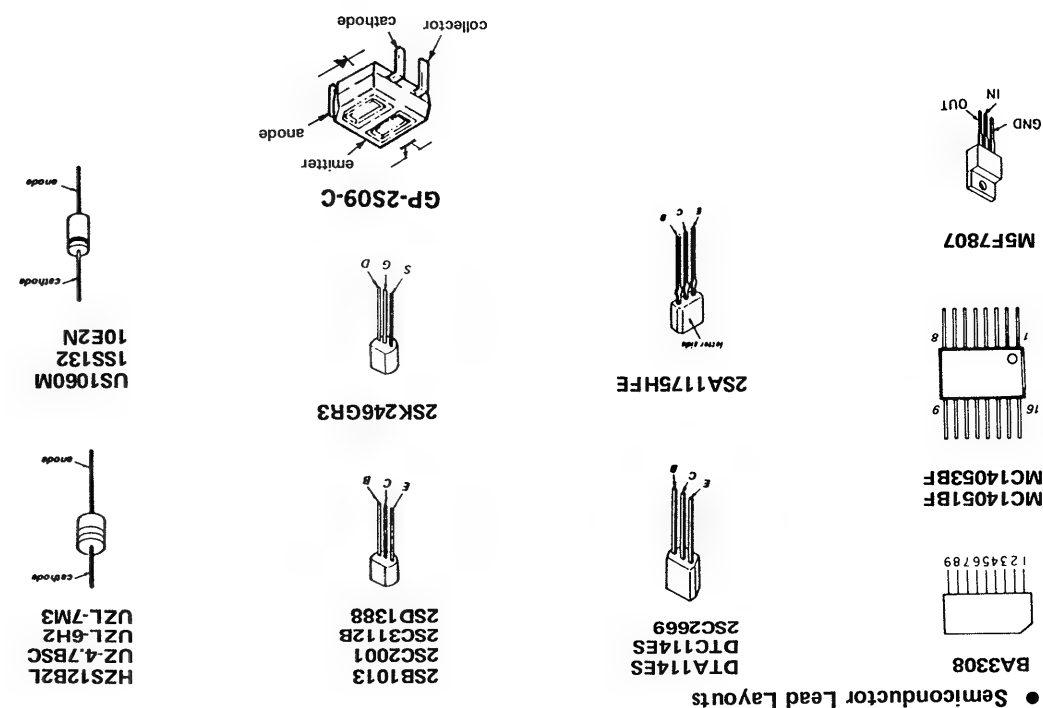
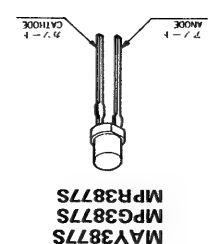
Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF : μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $\frac{1}{4}\text{W}$ or less unless otherwise specified.
- : fusible resistor.
- : adjustment for repair.
- Power voltage is fed with supply from external power voltage jack.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: REC
- (): PB
- Voltag es are taken with a VOM (50 $\text{k}\Omega/\text{V}$). Voltage variations may be noted due to normal production tolerances.
- Signal path.
- : PB (DECK B)
- : REC (DECK B)

Note: The components identified by mark or dotted line with mark are critical for safety. Replace only with part number specified.









SECTION 4

EXPLODED VIEWS

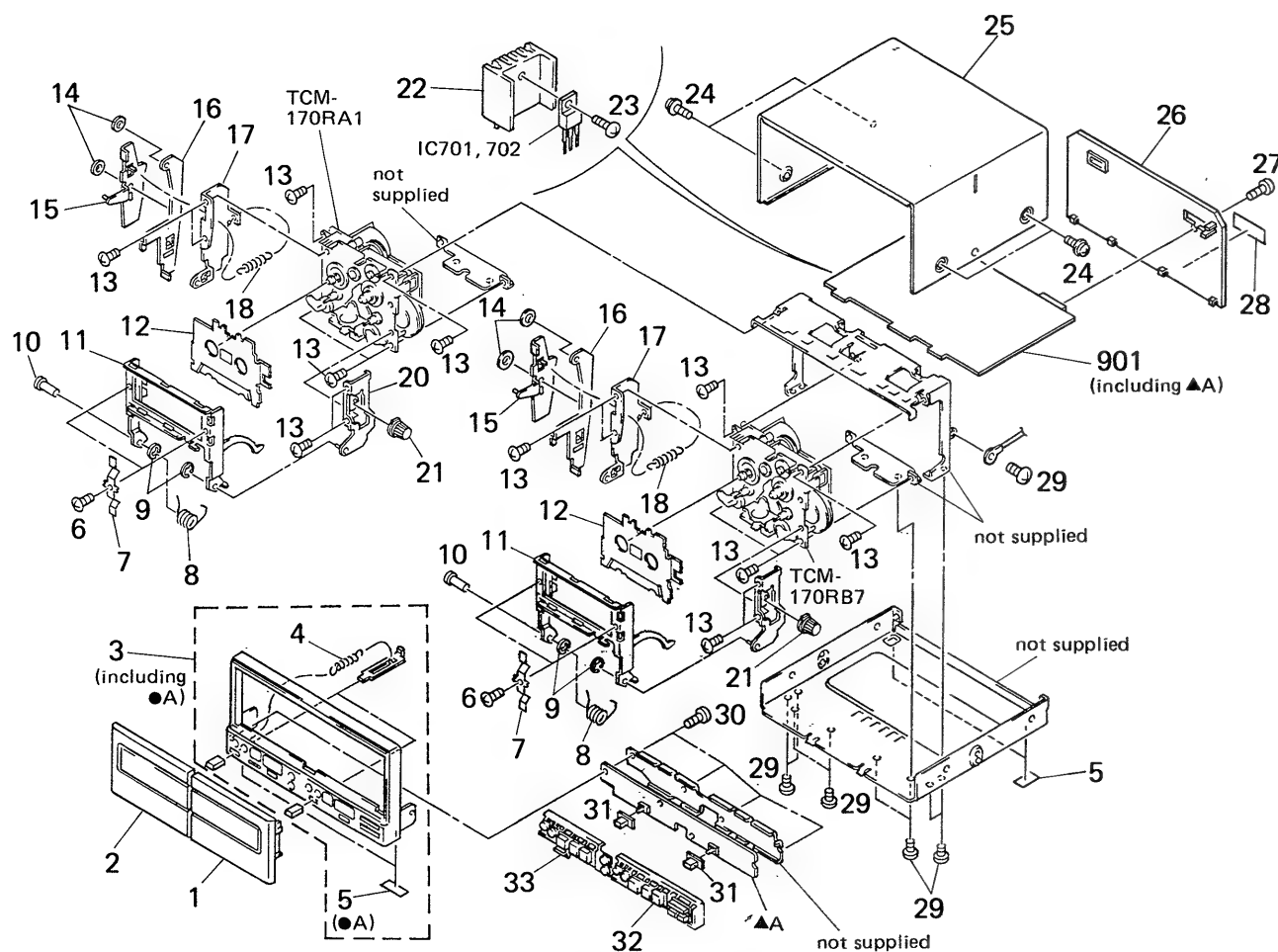
NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
Example:
(RED) ... KNOB, BALANCE (WHITE)

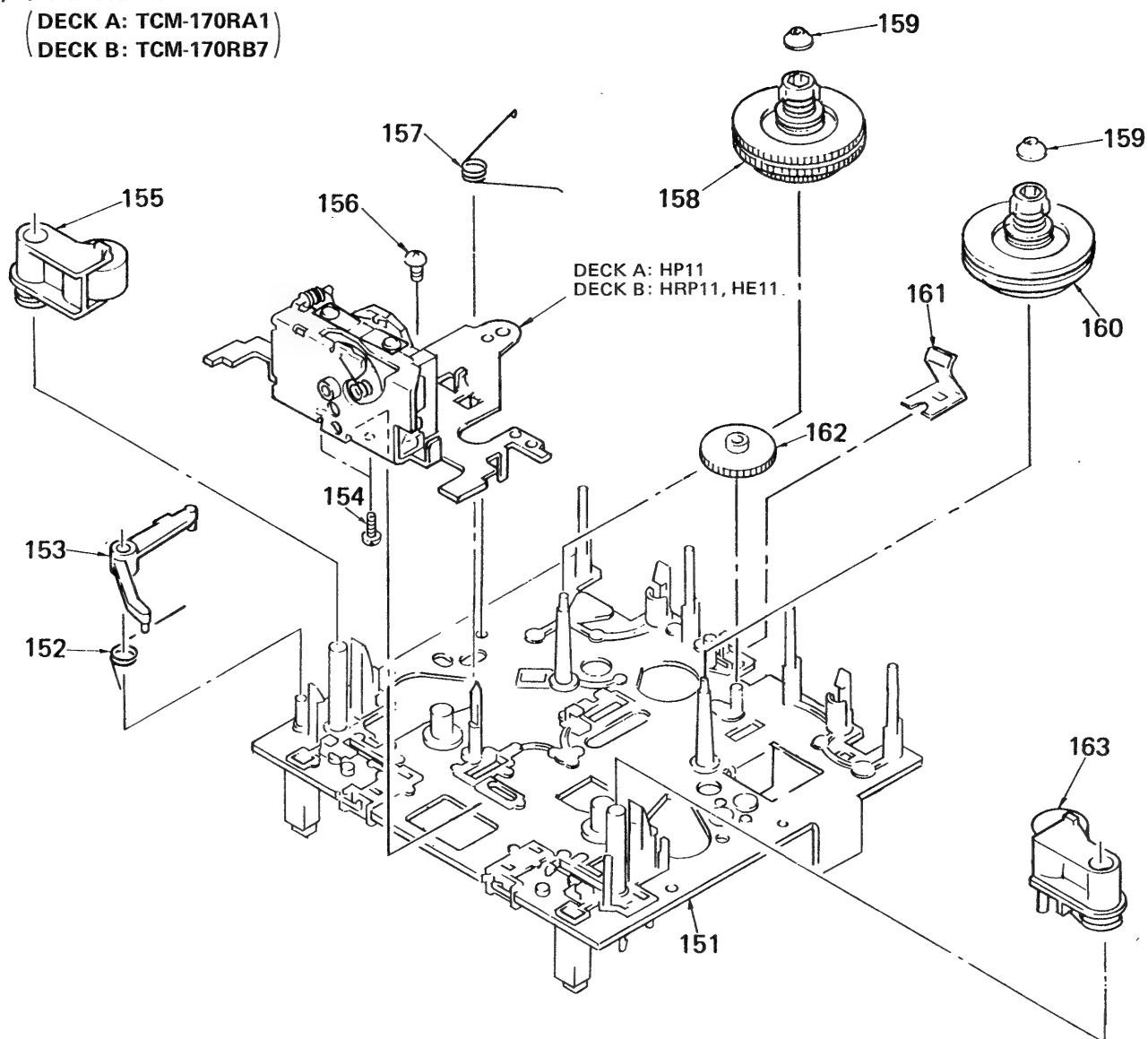
The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

(1) MAIN SECTION



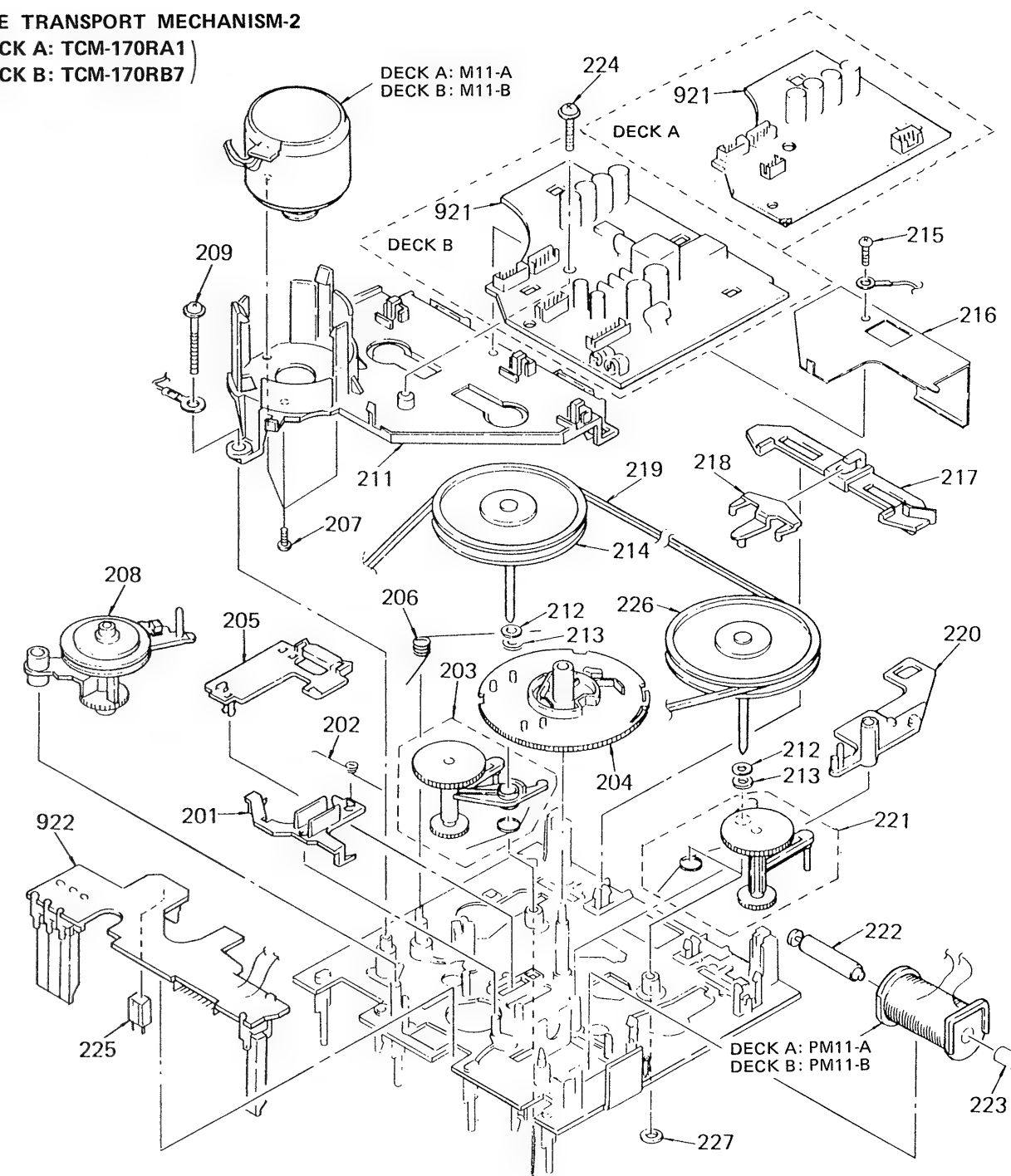
No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	X-3340-151-1	LID (B) ASSY, CASSETTE		20	*X-3332-494-1	BRACKET (R) ASSY	
2	X-3340-150-1	LID (A) ASSY, CASSETTE		21	X-3332-464-1	GEAR (DAMPER) ASSY	
3	X-3340-154-1	PANEL ASSY, FRONT		22	*4-921-402-01	HEAT SINK	
4	3-567-110-00	SPRING, TENSION		23	7-685-646-79	SCREW +BVT 3X8 TYPE2 IT-3	
5	4-930-336-01	FOOT (FELT)		24	3-704-366-01	SCREW (CASE) (MX8)	
6	7-621-255-15	SCREW +PTT 2X3 (S)		25	4-930-355-31	CASE	
7	3-340-137-01	SPRING		26	*3-352-815-11	PANEL, BACK	
8	3-346-364-01	SPRING (LOADING), TORSION		27	7-685-647-79	SCREW +BVT 3X10 TYPE2 N-S	
9	7-624-105-04	RETAINING, RING E-2.3		28	*3-349-022-01	(US, AEP, UK).....LABEL, MODEL NUMBER (AE/U)	
10	*3-346-334-01	SHAFT (HOLDER FITTING LEFT)		29	*3-349-031-01	(West Germany).....LABEL, MODEL NUMBER (AE4)	
11	*3-340-150-01	HOLDER, CASSETTE		29	7-685-870-01	SCREW +BVT 3X5 (S)	
12	*3-340-123-01	RETAINER, CASSETTE		30	7-685-136-11	SCREW +PTT 2.6X12 TYPE2 N-S	
13	7-621-773-86	SCREW +BVT 2.6X4 (S)		31	3-349-054-01	KNOB (SLIDE)	
14	3-558-708-21	WASHER STOPPER		32	X-3340-153-1	BUTTON (B) ASSY	
15	*X-3332-465-01	LEVER (LOCK)		33	X-3340-152-1	BUTTON (A) ASSY	
16	*X-340-142-01	LEVER (EJECT)		901	*2-006-098-A	MOUNTED PCB, AUDIO	
17	*X-3332-466-1	BRACKET (LEFT) ASSY		IC701	8-759-604-86	IC MSF7807	
18	3-343-474-01	SPRING, TENSION		IC702	8-759-604-90	IC MSF7907	

(2) TAPE TRANSPORT MECHANISM-1
(DECK A: TCM-170RA1)
(DECK B: TCM-170RB7)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	*X-3343-418-1	CHASSIS ASSY, MECHANICAL		159	3-343-439-01	CAP (REEL TABLE)	
152	3-343-477-01	SPRING, TORSION (EJECT SAFETY)		160	X-3343-401-1	TABEL ASSY, REEL	
153	*3-343-476-01	LEVER (EJECT SAFETY LEVER)		161	3-343-420-01	SPRING, LEAF	
154	7-685-102-19	SCREW # 2X4 NON-SLIT TYPE 2		162	3-343-411-01	GEAR (FF GEAR)	
				163	X-3343-402-1	LEVER (PINCH LEVER FWD) ASSY	
155	X-3343-403-1	LEVER (PINCH LEVER REV) ASSY		HP11	A-2108-129-A	(DECK A)...CHASSIS ASSY, HEAD	
156	7-621-773-86	SCREW +BVTT 2.6X4 (S)		HRP11	A-2108-130-A	(DECK B)...CHASSIS ASSY, HEAD	
157	3-343-401-01	SPRING, TORSION		HE11			
158	X-3343-415-1	TABEL (REV) ASSY, REEL					

(3) TAPE TRANSPORT MECHANISM-2
(DECK A: TCM-170RA1)
(DECK B: TCM-170RB7)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	3-343-453-01	SLIDER (BRAKE PLATE)		219	3-343-426-02	LEVER (CAPSTAN BELT SQUARE)	
202	3-343-429-01	SPRING, TORSION		220	3-343-493-01	BELT (PM LEVER)	
203	X-3343-406-1	LEVER (TU ARM REV) ASSY		221	X-3343-405-1	LEVER (TU ARM FWD) ASSY	
204	3-343-470-01	GEAR (CAM GEAR)		222	*3-343-425-01	ARBOR(MOVABLE IRON ARBOR),IRON	
205	*3-343-461-01	SLIDER		223	*3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
206	3-343-430-01	SPRING, TORSION		224	3-343-404-01	SCREW (PTNH 2X10)	
207	7-627-556-28	SCREW +P 2.6X3.5		225	*3-343-419-01	HOLDER (S SENSER A)	
208	X-3343-414-1	LAVER (FR ARM) ASSY		226	X-3343-431-1	FLYWHEEL (REV) COMPLETE ASSY	
209	3-343-403-01	SCREW (PTTWH 2X18)		227	3-343-473-01	WASHER, NYLON	
211	*X-3343-407-1	BASE (THRUST RETAINER) ASSY		921	*1-624-146-11	(DECK B)...PC BOARD, MD-B	
212	4-605-835-11	WASHER (2.6), POLYSLIDER			*1-624-147-11	(DECK A)...PC BOARD, MD-A	
213	3-307-482-00	WASHER, LUMILER		922	*1-624-148-11	PC BOARD, LEAF SW	
214	X-3343-429-1	FLYWHEEL COMPLETE ASSY		M11A	X-3343-408-1	(DECK A)...MOTOR ASSY	
215	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT		M11B	X-3343-408-1	(DECK B)...MOTOR ASSY	
216	3-343-480-01	PLATE, SHIELD		PM11A	1-454-456-11	(DECK A)...SOLENOID, PLUNGER	
217	*3-343-457-01	SLIDER (REVERSE SLIDER)		PM11B	1-454-456-11	(DECK B)...SOLENOID, PLUNGER	
218	3-343-462-01	LEVER					

SECTION 5

ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.



CAPACITORS:MF: μ F, PF: μ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

COILS

- MMH: mH, UH: μ H

SEMICONDUCTORSIn each case, U: μ , for example:UA....: μ A..., UPA....: μ PA...,
UPC....: μ PC, UPD....: μ PD...

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description					Ref.No.	Part No.	Description				
901	*A-2006-098-A	MOUNTED PCB, AUDIO					C105	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
921	*1-624-147-11	(DECK A)...PC BOARD, MD-A					C106	1-136-161-00	FILM	0.047MF	5%	50V	
	*1-624-146-11	(DECK B)...PC BOARD, MD-B					C107	1-123-875-11	ELECT	10MF	20%	50V	
922	*1-624-148-11	PC BOARD, LEAF SW					C108	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	
C41A	1-162-289-31	CERAMIC	390PF	10%	50V		C110	1-131-587-11	TANTALUM	0.68MF	10%	35V	
C41B	1-162-289-31	CERAMIC	390PF	10%	50V		C118	1-124-927-11	ELECT	4.7MF	20%	50V	
C42A	1-136-157-00	FILM	0.022MF	5%	50V		C119	1-136-169-00	FILM	0.22MF	5%	50V	
C42B	1-136-157-00	FILM	0.022MF	5%	50V		C120	1-124-927-11	ELECT	4.7MF	20%	50V	
C43A	1-124-282-00	ELECT	22MF	20%	25V		C121	1-123-875-11	ELECT	10MF	20%	50V	
C43B	1-124-282-00	ELECT	22MF	20%	25V		C122	1-124-282-00	ELECT	22MF	20%	25V	
C44	1-162-288-31	CERAMIC	330PF	10%	50V		C124	1-123-875-11	ELECT	10MF	20%	50V	
C45	1-136-273-91	FILM	75PF	5%	630V		C125	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C47	1-162-209-31	CERAMIC	27PF	5%	50V		C126	1-126-233-11	ELECT	22MF	20%	50V	
C48A	1-162-217-31	CERAMIC	56PF	5%	50V		C201	1-124-925-11	ELECT	2.2MF	20%	50V	
C48B	1-162-217-31	CERAMIC	56PF	5%	50V		C202	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V	
C61A	1-162-289-31	CERAMIC	390PF	10%	50V		C203	1-124-443-00	ELECT	100MF	20%	10V	
C61B	1-162-289-31	CERAMIC	390PF	10%	50V		C204	1-123-875-11	ELECT	10MF	20%	50V	
C62A	1-136-157-00	FILM	0.022MF	5%	50V		C205	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V	
C62B	1-136-157-00	FILM	0.022MF	5%	50V		C206	1-136-161-00	FILM	0.047MF	5%	50V	
C63A	1-124-282-00	ELECT	22MF	20%	25V		C207	1-123-875-11	ELECT	10MF	20%	50V	
C63B	1-124-282-00	ELECT	22MF	20%	25V		C208	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V	
C64	1-162-288-31	CERAMIC	330PF	10%	50V		C210	1-131-587-11	TANTALUM	0.68MF	10%	35V	
C65	1-136-273-91	FILM	75PF	5%	630V		C218	1-124-927-11	ELECT	4.7MF	20%	50V	
C67	1-162-209-31	CERAMIC	27PF	5%	50V		C219	1-136-169-00	FILM	0.22MF	5%	50V	
C68A	1-162-217-31	CERAMIC	56PF	5%	50V		C220	1-124-927-11	ELECT	4.7MF	20%	50V	
C68B	1-162-217-31	CERAMIC	56PF	5%	50V		C221	1-123-875-11	ELECT	10MF	20%	50V	
C81A	1-126-101-11	ELECT	100MF	20%	16V		C222	1-124-282-00	ELECT	22MF	20%	25V	
C81B	1-126-101-11	ELECT	100MF	20%	16V		C224	1-123-875-11	ELECT	10MF	20%	50V	
C82A	1-126-101-11	ELECT	100MF	20%	16V		C225	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C82B	1-126-101-11	ELECT	100MF	20%	16V		C226	1-126-233-11	ELECT	22MF	20%	50V	
C83	1-124-499-11	ELECT	1MF	20%	50V		C301	1-123-875-11	ELECT	10MF	20%	50V	
C84	1-124-925-11	ELECT	2.2MF	20%	50V		C302	1-123-875-11	ELECT	10MF	20%	50V	
C85	1-130-480-00	MYLAR	0.0056MF	5%	50V		C303	1-123-875-11	ELECT	10MF	20%	50V	
C86	1-130-476-00	MYLAR	0.0027MF	5%	50V		C304	1-123-875-11	ELECT	10MF	20%	50V	
C87	1-130-476-00	MYLAR	0.0027MF	5%	50V		C305	1-124-477-11	ELECT	47MF	20%	25V	
C88	1-136-562-11	FILM	0.0082MF	5%	630V		C306	1-124-477-11	ELECT	47MF	20%	25V	
C89	1-136-554-11	FILM	0.0018MF	5%	630V		C307	1-124-120-11	ELECT	220MF	20%	16V	
C90	1-136-553-11	FILM	0.0015MF	5%	630V		C308	1-124-120-11	ELECT	220MF	20%	16V	
C101	1-124-925-11	ELECT	2.2MF	20%	50V		C309	1-123-875-11	ELECT	10MF	20%	50V	
C102	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V		C310	1-123-875-11	ELECT	10MF	20%	50V	
C103	1-124-443-00	ELECT	100MF	20%	10V		C311	1-124-443-00	ELECT	100MF	20%	10V	
C104	1-123-875-11	ELECT	10MF	20%	50V		C312	1-126-233-11	ELECT	22MF	20%	50V	
							C313	1-123-875-11	ELECT	10MF	20%	50V	
							C314	1-123-875-11	ELECT	10MF	20%	50V	
							C315	1-124-499-11	ELECT	1MF	20%	50V	

Ref.No.	Part No.	Description			
C316	1-124-902-00	ELECT	0.47MF	20%	50V
C317	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C318	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C319	1-124-925-11	ELECT	2.2MF	20%	50V
C320	1-124-925-11	ELECT	2.2MF	20%	50V
C321	1-124-927-11	ELECT	4.7MF	20%	50V
C701	1-164-159-11	CERAMIC	0.1MF		50V
C702	1-164-159-11	CERAMIC	0.1MF		50V
C703	1-124-563-11	ELECT	2200MF	20%	25V
C704	1-124-480-11	ELECT	470MF	20%	25V
C705	1-124-120-11	ELECT	220MF	20%	16V
C706	1-124-360-00	ELECT	1000MF	20%	16V
C707	1-124-477-11	ELECT	47MF	20%	25V
C708	1-124-472-11	ELECT	470MF	20%	10V
C709	1-164-159-11	CERAMIC	0.1MF		50V
C710	1-164-159-11	CERAMIC	0.1MF		50V
C711	1-124-472-11	ELECT	470MF	20%	10V
C712	1-164-159-11	CERAMIC	0.1MF		50V
C713	1-164-159-11	CERAMIC	0.1MF		50V
C714	1-124-472-11	ELECT	470MF	20%	10V
C715	1-124-499-11	ELECT	1MF	20%	50V
C716	1-124-482-11	ELECT	33MF	20%	25V
C717	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C801	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C802	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C803	1-124-443-00	ELECT	100MF	20%	10V
C804	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C805	1-163-037-11	CERAMIC CHIP	0.022MF	10%	25V
C806	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C807	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C808	1-163-093-00	CERAMIC CHIP	10PF	5%	50V
C809	1-126-176-11	ELECT	220MF	20%	10V
C810	1-124-925-11	ELECT	2.2MF	20%	50V
C811	1-124-927-11	ELECT	4.7MF	20%	50V
C812	1-124-925-11	ELECT	2.2MF	20%	50V
C813	1-164-159-11	CERAMIC	0.1MF		50V
C814	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
CNP11A*	1-564-501-11	PIN, CONNECTOR 8P			
CNP11B*	1-506-615-11	PIN, CONNECTOR 9P			
CNP12A*	1-564-337-00	PIN, CONNECTOR 3P			
CNP12B*	1-564-337-61	PIN, CONNECTOR 3P			
CNP13A*	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP13B*	1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P			
CNP81A*	1-564-706-11	PIN, CONNECTOR (SMALL TYPE) 4P			
CNP81B*	1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P			
CNP82A*	1-564-339-00	PIN, CONNECTOR 5P			
CNP82B*	1-564-339-61	PIN, CONNECTOR 5P			
CNP83	*1-564-338-61	PIN, CONNECTOR 4P			
CNP84	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CNP301*	1-565-291-11	SOCKET, CONNECTOR 13P			
CNP801*	1-564-338-00	PIN, CONNECTOR 4P			
CNP802*	1-564-337-00	PIN, CONNECTOR 3P			
CNP803*	1-564-338-61	PIN, CONNECTOR 4P			
CNP804*	1-564-338-71	PIN, CONNECTOR 4P			

Ref.No.	Part No.	Description			
D11A	8-719-107-94	DIODE 1SS132			
D11B	8-719-107-94	DIODE 1SS132			
D81	8-719-107-94	DIODE 1SS132			
D301	8-719-000-26	DIODE US1060M			
D302	8-719-000-90	ZENER DIODE UZL-7M3			
D303	8-719-000-90	ZENER DIODE UZL-7M3			
D304	8-719-000-26	DIODE US1060M			
D701	8-719-200-02	DIODE 10E2			
D702	8-719-200-02	DIODE 10E2			
D703	8-719-200-02	DIODE 10E2			
D704	8-719-200-02	DIODE 10E2			
D705	8-719-000-26	DIODE US1060M			
D706	8-719-000-26	DIODE US1060M			
D707	8-719-200-02	DIODE 10E2			
D708	8-719-200-02	DIODE 10E2			
D709	8-719-933-77	ZENER DIODE HZS12B2L			
D710	8-719-000-69	ZENER DIODE UZL-6H2			
D711	1-807-913-21	DIODE 11EQS04			
D801	8-719-200-02	DIODE 10E2			
D802	8-719-200-02	DIODE 10E2			
D803	8-719-200-02	DIODE 10E2			
D804	8-719-000-26	DIODE US1060M			
D805	8-719-000-26	DIODE US1060M			
D806	8-719-942-15	LED MPG3877S			
D807	8-719-942-15	LED MPG3877S			
D808	8-719-942-15	LED MPG3877S			
D809	8-719-942-15	LED MPG3877S			
D810	8-719-942-14	LED MAY3877S			
D811	8-719-942-17	LED MPR3877S			
D812	8-719-942-15	LED MPG3877S			
D813	8-719-942-17	LED MPR3877S			
D814	8-719-942-17	LED MPR3877S			
HP11	A-2108-129-A	(DECK A)...CHASSIS ASSY, HEAD			
HRP11	A-2108-130-A	(DECK B)...CHASSIS ASSY, HEAD			
IC81A	8-759-111-44	IC UPC4570C-1			
IC81B	8-759-111-44	IC UPC4570C-1			
IC301	8-759-939-73	IC BA3308			
IC303	8-752-033-61	IC CXA1198AP			
IC304	8-759-009-05	IC MC14051BF			
IC305	8-759-009-07	IC MC14053BF			
IC306	8-759-945-58	IC RC4558P			
IC307	8-759-945-58	IC RC4558P			
IC308	8-759-009-07	IC MC14053BF			
IC309	8-752-032-05	IC CXA1101M			
IC701	8-759-604-86	IC M5F7807			
IC702	8-759-604-90	IC M5F7907			
IC801	8-759-632-53	IC M50964-212FP			
L41	1-410-780-11	INDUCTOR 27MMH			
L61	1-410-780-11	INDUCTOR 27MMH			
L801	1-408-080-00	INDUCTOR 100UH			
LPF101	1-236-087-11	FILTER, LOW PASS			
LPF201	1-236-087-11	FILTER, LOW PASS			
M11A	X-3343-408-1	(DECK A)...MOTOR ASSY			
M11B	X-3343-408-1	(DECK B)...MOTOR ASSY			



Ref.No.	Part No.	Description
PM11A	1-454-456-11	(DECK A)...SOLENOID, PLUNGER
PM11B	1-454-456-11	(DECK B)...SOLENOID, PLUNGER
Q11A	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q11B	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q12A	8-719-939-23	PHOTO TRANSISTOR GP2S09-C
Q12B	8-719-939-23	PHOTO TRANSISTOR GP2S09-C
Q81	8-729-111-29	TRANSISTOR 2SD1388
Q82	8-729-100-13	TRANSISTOR 2SC2001
Q83	8-729-100-13	TRANSISTOR 2SC2001
Q101	8-729-900-98	TRANSISTOR DTC143TK
Q102	8-729-103-16	TRANSISTOR 2SC1622A
Q103	8-729-900-98	TRANSISTOR DTC143TK
Q201	8-729-900-98	TRANSISTOR DTC143TK
Q202	8-729-103-16	TRANSISTOR 2SC1622A
Q203	8-729-900-98	TRANSISTOR DTC143TK
Q301	8-729-900-53	TRANSISTOR DTC114EK
Q302	8-729-901-04	TRANSISTOR DTA114EK
Q303	8-729-900-98	TRANSISTOR DTC143TK
Q304	8-729-100-76	TRANSISTOR 2SA812-M6
Q305	8-729-901-04	TRANSISTOR DTA114EK
Q306	8-729-901-04	TRANSISTOR DTA114EK
Q307	8-729-901-04	TRANSISTOR DTA114EK
Q308	8-729-901-04	TRANSISTOR DTA114EK
Q701	8-729-103-16	TRANSISTOR 2SC1622A
Q702	8-729-904-27	TRANSISTOR 2SD1761-E
Q703	8-729-103-16	TRANSISTOR 2SC1622A
Q704	8-729-904-27	TRANSISTOR 2SD1761-E
Q705	8-729-103-16	TRANSISTOR 2SC1622A
Q706	8-729-103-16	TRANSISTOR 2SC1622A
Q801	8-729-100-76	TRANSISTOR 2SA812-M6
Q802	8-729-801-83	TRANSISTOR 2SB1013
Q803	8-729-801-83	TRANSISTOR 2SB1013
Q804	8-729-801-83	TRANSISTOR 2SB1013
Q805	8-729-801-83	TRANSISTOR 2SB1013
Q806	8-729-801-83	TRANSISTOR 2SB1013
Q807	8-729-901-04	TRANSISTOR DTA114EK
Q808	8-729-901-04	TRANSISTOR DTA114EK
Q811	8-729-100-76	TRANSISTOR 2SA812-M6
Q812	8-729-100-76	TRANSISTOR 2SA812-M6
Q813	8-729-100-76	TRANSISTOR 2SA812-M6
Q814	8-729-900-53	TRANSISTOR DTC114EK
Q816	8-729-100-76	TRANSISTOR 2SA812-M6
R11B	1-247-834-11	CARBON 1.3K 5% 1/4W
R12B	1-249-414-11	CARBON 560 5% 1/4W
R13B	1-247-818-11	CARBON 300 5% 1/4W
R14A	1-249-408-11	CARBON 180 5% 1/4W
R14B	1-249-408-11	CARBON 180 5% 1/4W
R17A	1-249-437-11	CARBON 47K 5% 1/4W
R17B	1-249-437-11	CARBON 47K 5% 1/4W
R18A	1-249-437-11	CARBON 47K 5% 1/4W
R18B	1-249-437-11	CARBON 47K 5% 1/4W
R41A	1-247-881-00	CARBON 120K 5% 1/4W
R41B	1-247-881-00	CARBON 120K 5% 1/4W
R42A	1-249-405-11	CARBON 100 5% 1/4W
R42B	1-249-405-11	CARBON 100 5% 1/4W

Ref.No.	Part No.	Description			
R43A	1-247-882-11	CARBON	130K	5%	1/4W
R43B	1-247-882-11	CARBON	130K	5%	1/4W
R44A	1-249-426-11	CARBON	5.6K	5%	1/4W
R44B	1-249-426-11	CARBON	5.6K	5%	1/4W
R45	1-249-430-11	CARBON	12K	5%	1/4W
R61A	1-247-881-00	CARBON	120K	5%	1/4W
R61B	1-247-881-00	CARBON	120K	5%	1/4W
R62A	1-249-405-11	CARBON	100	5%	1/4W
R62B	1-249-405-11	CARBON	100	5%	1/4W
R63A	1-247-882-11	CARBON	130K	5%	1/4W
R63B	1-247-882-11	CARBON	130K	5%	1/4W
R64A	1-249-426-11	CARBON	5.6K	5%	1/4W
R64B	1-249-426-11	CARBON	5.6K	5%	1/4W
R65	1-249-430-11	CARBON	12K	5%	1/4W
R81A	1-249-409-11	CARBON	220	5%	1/4W
R81B	1-249-409-11	CARBON	220	5%	1/4W
R82A	1-249-409-11	CARBON	220	5%	1/4W
R82B	1-249-409-11	CARBON	220	5%	1/4W
R83	1-249-429-11	CARBON	10K	5%	1/4W
R84	△ 1-212-849-00	FUSIBLE	4.7	5%	1/4W F
R85	1-249-435-11	CARBON	33K	5%	1/4W
R86	1-249-435-11	CARBON	33K	5%	1/4W
R101	1-216-084-00	METAL GLAZE	30K	5%	1/10W
R102	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R103	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R104	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R105	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W
R106	1-216-068-00	METAL GLAZE	6.2K	5%	1/10W
R107	1-216-043-00	METAL GLAZE	560	5%	1/10W
R108	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W
R109	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R110	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R111	1-216-105-00	METAL GLAZE	220K	5%	1/10W
R112	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R113	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R114	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R120	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R121	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R122	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R123	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R124	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R125	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R126	1-216-060-00	METAL GLAZE	3K	5%	1/10W
R127	1-216-037-00	METAL GLAZE	330	5%	1/10W
R128	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R129	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R130	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R131	1-216-748-11	METAL GLAZE	39K	5%	1/10W
R132	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R133	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R201	1-216-084-00	METAL GLAZE	30K	5%	1/10W
R202	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R203	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R204	1-216-049-00	METAL GLAZE	1K	5%	1/10W

Note: The components identified by mark △ or dotted line with mark △ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description				
R205	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R206	1-216-068-00	METAL GLAZE	6.2K	5%	1/10W	
R207	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R208	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R209	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R210	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R211	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R212	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R213	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R214	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R220	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R221	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R222	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R223	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R224	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R225	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R226	1-216-060-00	METAL GLAZE	3K	5%	1/10W	
R227	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R228	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R229	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R230	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R231	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R232	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R233	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R301	△ 1-212-849-00	FUSIBLE	4.7	5%	1/4W	F
R302	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R303	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R304	1-216-052-00	METAL GLAZE	1.3K	5%	1/10W	
R305	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R306	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R307	1-249-409-11	CARBON	220	5%	1/4W	
R308	1-249-409-11	CARBON	220	5%	1/4W	
R309	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R310	1-249-417-11	CARBON	1K	5%	1/4W	
R311	1-216-129-00	METAL GLAZE	2.2M	5%	1/10W	
R312	1-249-437-11	CARBON	47K	5%	1/4W	
R313	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R314	1-249-409-11	CARBON	220	5%	1/4W	
R316	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R317	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R318	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R319	1-215-460-00	METAL	43K	1%	1/6W	
R320	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R321	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R322	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R323	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R325	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R332	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R333	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R334	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R335	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R336	1-216-088-00	METAL GLAZE	43K	5%	1/10W	
R337	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R338	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R339	1-216-090-00	METAL GLAZE	51K	5%	1/10W	
R340	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R341	1-216-091-00	METAL GLAZE	56K	5%	1/10W	

Ref.No.	Part No.	Description				
R342	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R343	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R344	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R345	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R346	1-216-084-00	METAL GLAZE	30K	5%	1/10W	
R347	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R348	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R349	1-216-098-00	METAL GLAZE	110K	5%	1/10W	
R350	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R351	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R352	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R353	1-216-103-00	METAL GLAZE	180K	5%	1/10W	
R354	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R355	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R356	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R357	1-216-088-00	METAL GLAZE	43K	5%	1/10W	
R358	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R359	1-216-102-00	METAL GLAZE	160K	5%	1/10W	
R360	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R361	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R362	1-216-092-00	METAL GLAZE	62K	5%	1/10W	
R363	1-216-090-00	METAL GLAZE	51K	5%	1/10W	
R364	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R365	1-216-094-00	METAL GLAZE	75K	5%	1/10W	
R366	1-216-098-00	METAL GLAZE	110K	5%	1/10W	
R367	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R368	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R369	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R370	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R371	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R372	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R373	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R374	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R375	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R376	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R377	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R378	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R379	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R701	△ 1-219-108-11	FUSIBLE	1.5	5%	1W	F
R702	1-249-423-11	CARBON	3.3K	5%	1/4W	
R703	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R704	△ 1-219-109-11	FUSIBLE	3.9	5%	1W	F
R705	△ 1-219-110-11	FUSIBLE	150	5%	1W	F
R706	△ 1-219-110-11	FUSIBLE	150	5%	1W	F
R707	1-249-425-11	CARBON	4.7K	5%	1/4W	
R708	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R709	1-249-419-11	CARBON	1.5K	5%	1/4W	
R710	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R711	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R712	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R713	1-216-013-00	METAL GLAZE	33	5%	1/10W	
R800	1-249-417-11	CARBON	1K	5%	1/4W	
R801	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R802	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R803	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R804	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R805	1-216-049-00	METAL GLAZE	1K	5%	1/10W	

Note: The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description			
R806	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R807	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R808	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R809	1-249-393-11	CARBON	10	5%	1/4W
R810	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R811	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R812	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R813	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R814	1-249-393-11	CARBON	10	5%	1/4W
R815	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R816	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R817	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R818	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R819	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R820	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R824	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R825	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R826	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R827	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R828	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R829	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R830	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R831	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R832	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R833	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R834	1-247-895-00	CARBON	470K	5%	1/4W
R835	1-247-895-00	CARBON	470K	5%	1/4W
R836	1-216-041-00	METAL GLAZE	470	5%	1/10W
R837	1-216-041-00	METAL GLAZE	470	5%	1/10W
R839	1-216-029-00	METAL GLAZE	150	5%	1/10W
R840	1-216-029-00	METAL GLAZE	150	5%	1/10W
R841	1-216-029-00	METAL GLAZE	150	5%	1/10W
R842	1-216-029-00	METAL GLAZE	150	5%	1/10W
R843	1-216-029-00	METAL GLAZE	150	5%	1/10W
R844	1-216-037-00	METAL GLAZE	330	5%	1/10W
R845	1-216-041-00	METAL GLAZE	470	5%	1/10W
R846	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W
R847	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R848	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R849	1-249-412-11	CARBON	390	5%	1/4W
R850	1-249-411-11	CARBON	330	5%	1/4W
R852	1-249-412-11	CARBON	390	5%	1/4W
R853	1-249-411-11	CARBON	330	5%	1/4W
R854	1-249-415-11	CARBON	680	5%	1/4W
R855	1-249-417-11	CARBON	1K	5%	1/4W
R856	1-249-426-11	CARBON	5.6K	5%	1/4W
R857	1-249-430-11	CARBON	12K	5%	1/4W
R858	1-249-407-11	CARBON	150	5%	1/4W
R859	1-249-409-11	CARBON	220	5%	1/4W
R860	1-249-411-11	CARBON	330	5%	1/4W
R861	1-249-413-11	CARBON	470	5%	1/4W
R862	1-247-832-11	CARBON	1.1K	5%	1/4W
R863	1-249-417-11	CARBON	1K	5%	1/4W
R864	1-249-420-11	CARBON	1.8K	5%	1/4W
R865	1-249-424-11	CARBON	3.9K	5%	1/4W
R867	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W

Ref.No.	Part No.	Description
RV41A	1-228-989-00	RES, ADJ, CARBON 470
RV41B	1-228-989-00	RES, ADJ, CARBON 470
RV42	1-230-500-11	RES, ADJ, CARBON 220K
RV61A	1-228-989-00	RES, ADJ, CARBON 470
RV61B	1-228-989-00	RES, ADJ, CARBON 470
RV62	1-230-500-11	RES, ADJ, CARBON 220K
RV101	1-228-995-00	RES, ADJ, CARBON 22K
RV201	1-228-995-00	RES, ADJ, CARBON 22K
RY81	1-515-614-11	RELAY
S11A	1-571-281-21	SWITCH, LEAF (HALF DET)
S11B	1-571-281-21	SWITCH, LEAF (HALF DET)
S12B	1-571-281-21	SWITCH, LEAF (ERASE PROOF-SIDE A)
S13B	1-571-281-21	SWITCH, LEAF (ERASE PROOF-SIDE B)
S14A	1-571-281-21	SWITCH, LEAF (CrO2)
S14B	1-571-281-21	SWITCH, LEAF (CrO2)
S15B	1-571-281-21	SWITCH, LEAF (METAL)
S301	1-554-798-31	SWITCH, SLIDE (ISS)
S302	1-570-845-11	SWITCH, SLIDE (DOLBY ON/OFF)
S801	1-554-303-21	SWITCH, KEY BOARD (DECK A □)
S802	1-554-303-21	SWITCH, KEY BOARD (DECK A ▷)
S803	1-554-303-21	SWITCH, KEY BOARD (DECK A ◁)
S804	1-554-303-21	SWITCH, KEY BOARD (DECK A ◁◁)
S805	1-554-303-21	SWITCH, KEY BOARD (DECK A ▷▷)
S806	1-554-303-21	SWITCH, KEY BOARD (DECK B □)
S807	1-554-303-21	SWITCH, KEY BOARD (DECK B ◻◻)
S808	1-554-303-21	SWITCH, KEY BOARD (DECK B ▷)
S809	1-554-303-21	SWITCH, KEY BOARD (DECK B ◁)
S810	1-554-303-21	SWITCH, KEY BOARD (DECK B ◻)
S811	1-554-303-21	SWITCH, KEY BOARD (DECK B ◁◁)
S812	1-554-303-21	SWITCH, KEY BOARD (DECK B ▷▷)
S813	1-554-303-21	SWITCH, KEY BOARD (DECK B ●)
S814	1-554-303-21	SWITCH, KEY BOARD (AMS/BLANK SKIP)
S815	1-554-303-21	SWITCH, KEY BOARD (DUBBING SPEED:HIGH)
S816	1-554-303-21	SWITCH, KEY BOARD (DUBBING SPEED:NORMAL)
S818	1-570-835-11	SWITCH, SLIDE (DIRECTION MODE)
T81	1-433-337-11	TRANSFORMER, BIAS OSCILLATION
X801	1-577-082-31	OSCILLATOR, CERAMIC (4MHz)

